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STUDIES IN THE GENUS EPICAUTA OF THE NORTH AMERICAN CONTINENT (MELOIDAE)

II. THE UNIFORMA-GROUP[1]

By FLOYD G. WERNER[2]

The Uniforma-Group is a part of the subgenus *Gnathospasta,* recently reviewed by the author.[3] The group can be defined as including all species of *Epicauta* which have the following combination of characters in the male: metatibiae with a comb on the inside of the apex; first antennal segment excavated externally near the apex to some degree and the second segment shorter than the third; protibiae with two apical spurs and protarsal segment I as long as segment II, not distorted. Female specimens show an indication of the excavation of the first antennal segment in most cases and have the second segment shorter than the third.

The group occupies a known range from eastern Arizona and eastern Colorado to the valley of the Rio Balsas of Mexico. The adults are apparently largely blossom feeders, though the records of adult feeding are scanty. In southern Mexico Convolvulaceae seem to be the preferred plants; the two species most abundant in the United States prefer *Solanum*. The adults emerge in the summer but there are a few records extending into the fall. The members of the Funesta-Group appear to emerge later in the season, as far as the records go, and to have their main range south of the main range of the Uniforma-Group.

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[1] I—The Caviceps-Group. 1955, Bull. Brooklyn Ent. Soc. 50: 1-12.

[2] University of Arizona, Tucson.

[3] 1954, Coleop. Bull. 8: 25-27. The following corrections should be made: *E. atricolor* Champion should be removed to the subgenus *Epicauta.* A paratype examined, probably a male but in too poor condition to determine exactly, lacks the metatibial comb and differs from the norm of the subgenus in shape of prothorax and form of antennae. *E. terminata* (Dugès) should be added to the Funesta-Group. The prothorax and antennae are normal for the subgenus. In a series of specimens collected by R. K. Selander at Mexcala, Guerrero, two males out of six have poorly developed metatibial combs. All other specimens examined have lacked this comb. *E. haroldi* (Haag) also appears to be assignable to *Gnathospasta.* A single female from Jutiapa, Guatemala in the Chicago Natural History Museum agrees well with Haag's description and fits best in *Gnathospasta* on form of antennae and prothorax. It probably belongs to the Funesta-Group, which tends to have heavier antennae than the Uniforma-Group.

Females cannot be placed to species group, or even to the subgenus, with any degree of certainty except by association with males. A peculiar subcampanulate shape of the prothorax of most species, tapering antennae and the antennal characters mentioned above are of some use. But these characters are shared with the Funesta-Group, which differs most notably in that the males have a single spur on the protibiae.

Most male specimens have the metatibial comb well developed. It is somewhat unstable in *E. bipunctata,* at best poorly developed and sometimes absent. The teeth of the comb are characteristically flattened and arranged in a series more or less parallel to the axis of the tibia. In some cases the series is somewhat curved. That the teeth are modified setae is indicated by the condition in one specimen of *E. bipunctata,* in which one of the teeth in the middle of the comb is replaced by a normal seta.

Some of the species of the Uniforma-Group are highly variable in the pattern of color of the pubescence. The most variable are *bipunctata, stigmata* and *tenuemarginata*. Each of these varies from entirely cinereous to entirely black. *Niveolineata* varies somewhat, especially on head and pronotum, but has distinctive elytral markings. The rest of the known species are not known to vary in color pattern to any great degree but some of these species are represented by single specimens. *Melanochroa* and *leoni* are easily confused with entirely black specimens of the three highly variable species and occur in the same region.

In making identifications of samples from the area from Nayarit to Guerrero it is of great aid to handle series together. Entirely black or cinereous specimens can then be associated with more readily identifiable forms by direct comparison of structural characters. Large, entirely black females from Nayarit to Jalisco may be *melanochroa* or a black form of *croceicincta* (Dugès) in the Funesta-Group. The form of *bipunctata* with a black spot toward the apex of each elytron is very similar to *punctum* (Dugès) in the Funesta-Group. *Stigmata,* in its cinereous form, is very similar to *uniforma*. However, *uniforma* is always uniformly colored dorsally and *stigmata* has some of its variants in a series. By this criterion all known samples from Zacatecas and northward in Mexico and all from the United States belong to *uniforma* and all from Guanajuato southward to *stigmata*. The relationship between the two is certainly close and it is possible that the differences indicate races rather than species. Since there is a very distinct break in the *Epicauta* faunas between Zacatecas and the area from Nayarit across the southern part of the central plateau, it seems more appropriate to treat the two as distinct species.

The following key to species is designed for use with male specimens. Both sexes of the more striking species may fit equally well but care should be taken to avoid similar species in the Funesta-Group when an attempt is made to identify females.

1. Mandibles normal, evenly curved and overlapping at the tip; incisor area with distinct teeth 2

Mandibles elongate, angled inward and backward at about the middle and meeting along the straight incisor surface, this portion lacking distinct teeth 12

2. Antennal segment I usually feebly excavated toward the apex on the outer edge, the excavation not flattened. Segment II without an opposing flattened surface, or, if slightly flattened, without a tuft of differentiated pubescence on this surface 3

Antennal segment I elongate, strongly excavated externally toward the apex, the excavation flattened. Segment II strongly flattened on the opposing surface, with a tuft of short, fine pubescence on this surface 11

3. Pubescence cinereous dorsally, black on markings as follows: a pair of vittae on each elytron, connected squarely behind; two marks or all of pronotum and part or all of head .... **E. niveolineata** (Haag)

Not so marked 4

4. Pubescence cinereous dorsally, black across base and apex of elytra, on two marks on the pronotum and on the head .... **E. tripartita** Champ.

Not so marked 5

5. Pubescence normal, not elongate, on flexor surface of metafemora and metatibiae 6

Pubescence elongate on flexor surface of metafemora and metatibiae 10

6. Pubescence cinereous to luteo-cinereous above, uniformly colored in a series or varying only in hue. There may be obscure brownish or black markings at the very base of the elytra in some specimens 7

Pubescence color not uniformly cinereous to luteo-cinereous in a series. Pale specimens, if any, associated with other variously marked specimens in a series 9

7. Tibiae black-pubescent .... **E. nigritibialis** sp. n.

Tibiae pale-pubescent, sometimes marked with brown or black but not entirely dark 8

8. Head subquadrate, not strikingly narrowed anteriorly. Smaller, stouter species, tending to be cinereous to brownish-cinereous in color of pubescence .... **E. uniforma** Werner

Head narrowly triangular, the sides quite straight. Larger, narrower species, tending to be densely luteo-cinereous in color of pubescence. Elytra paler in ground color than rest of body .... **E. alpina** Werner

9. Pubescence cinereous with a black subapical spot on each elytron, less often cinereous from head onto base of elytra and black behind, all cinereous or all black. Metatibial comb poorly developed, apparently absent in some male specimens .... **E. bipunctata** sp. n.

Pubescence in a series in some or all of the following patterns: cinereous to brownish-cinereous, the same with scattered black setae, black with scattered pale setae, similar but with obscurely paler margins and discal vittae on the elytra, or all black. Metatibial comb well developed .... **E. stigmata** (Dugès)

(If pubescence all black in a series and part of males with long pubescence on flexor surface of metafemora .... **E. melanochroa** Wellm.)

10. Pubescence entirely black in a series. Antennal segment I feebly excavated. Some male specimens may have normal pubescence on the flexor surface of the metafemora. Large and slender .... **E. melanochroa** Wellm.

Pubescence variable in a series, cinereous, black with narrow cinereous margins on the elytra or entirely black. Antennal segment I strongly excavated. Shorter and stouter .... **E. tenuemarginata** sp. n.

11. Head quadrate. Pronotum normal, straight across base and with surface even. Known specimens all black .... **E. leoni** Dugés

Head broad and triangular. Pronotum excavated at base and with lateral elevations and depressions on the disc. The single known specimen is black..... **E. triquetra** sp. n.

12. Pubescence black. Outer protibial spur normal .... **E. selanderorum** sp. n.

Pubescence brownish-cinerous or cinereous 13

13. Outer protibial spur stout, sticklike. Antennal segments VI-X gradually tapering .... **E. mimetica** (Horn.)

(Antennal segments VI-X triangularly expanded .... **E. labialis** (Dugès))

Epicauta niveolineata (Haag)

Lytta niveolineata Haag, 1880, Deutsche Ent. Zeits. 24 : 46.
Epicauta niveolineata, Champion, 1892, Biol. Centrali Americana, Coleop. 4(2) : 416, pl. 19, figs. 14, 15.

This is a very distinctively marked species and one that has already been well described and figured by Champion. Specimens from Champion's series have been examined and there appears to be no structural difference between specimens in which the head and pronotum are black-pubescent and others in which the head and pronotum have the pubescence cinereous with paired black marks.

The known range lies mostly in the state of Guerrero, the recorded specimens all coming from between Chilpancingo and Acapulco except for one specimen listed as from Jalapa (presumably in Vera Cruz) by Champion. The only record available other than Champion's is from 16 mi. S. of Chilpancingo, taken by C. Bolivar and H. R. Roberts, Sept. 14, 1940.

Epicauta tripartita Champ.

Epicauta tripartita Champion, 1892, *op. cit.*: 421, pl. 19, fig. 20. Vaurie, 1950, American Mus. Novitates 1477 : 25.

This is another very distinctively marked species and it has also been described and figured by Champion. Little need be added. The metatibial comb is well developed in the male. Antennal proportions of a male from Tepic, Nayarit are as follows:[4] 150/46, 66/35, 112/40, 85/36, 85/34, 85/31, 83/29, 83/27, 77/27, 77/27, 98/25. The excavation of segment I is rather shallow but distinct.

Tripartita is rare in collections. Champion's series of three specimens came from Ventanas on the western border of Durango at about the middle and I have before me a single male collected by F. W. & F. G. Werner at Tepic, Nayarit, July 20-24, 1952. This specimen was sitting on an unidentified shrub and was apparently not feeding.

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[4] Antennal proportions used throughout this paper are figured to a total length of 1000 units, as indicated in a previous paper (Psyche 60: 108). The numerators represent length of the segments, the denominators the maximum width on the same scale. The segments are listed from base to apex.

Epicauta nigritibialis sp. n.

This species is known from a single male, from Saltillo, Mexico, presumably in the state of Coahuila. It most resembles *E. alpina* Werner but differs most notably in having the head of normal shape and in having the tibiae black-pubescent. Holotype: ♂, ca. 16 mm. long with head deflexed, 3.82 mm. wide across base of elytra, moderately slender. Ground color of body black, of elytra brown. Pubescence appressed, dense enough largely to obscure the ground color, luteo-cinerous over most of the body, largely black on antennae, tarsi, tibiae, apical half of femora, trochanters, mouthparts and obscurely along the hind margin of the head.

Head almost evenly rounded behind eyes, 2.37 mm. long to clypeus, 2.62 mm. wide behind eyes, 2.62 across eyes. Surface densely covered with small but deep punctures that are ca. 0.04 mm. across and ca. 0.01 mm. apart; intervals punctulate. Median impressed line distinct near vertex. Between the eyes there is a narrow, slightly elevated smooth brown diamond that bears some punctulation. Antennal calluses small, with sparser punctures than rest of head and black pubescence. Eyes fairly narrow, oblique, 1.45 x 0.83 mm., separated by 1.48 mm. across the front. Mouth parts normal; last segment of maxillary palpi 0.66 x 0.32 mm. Antennae moderately slender, 7.29 mm. long. Segment I is moderately slender, feebly excavated externally near the apex; segment II is slender, not flattened; segments IV-XI are subparallel. Proportions: 151/54, 69/35, 108/40, 82/39, 84/38, 82/35, 84/35, 82/32, 73/30, 78/28, 104/26.

Pronotum moderately slender, 2.91 mm. long, 2.81 mm. wide, the sides roughly parallel for the basal 5/8, then converging gradually. Surface much as on head. Basal impressed line distinct; median impressed line distinct on middle of disc, augmented by a narrow smooth zone for a short distance. Elytra subparallel, 10.75 mm. long, ca. 3.82 mm. wide across base, ca. 4.24 at widest. The humeri and very tips have small markings of black pubescence. Underside largely pale-pubescent, except for black pubescence on the sixth abdominal sternite and a median black suffusion on the fifth, and the leg markings noted above. On the metafemora the black pubescence continues narrowly along the extensor surface to the base. The outer spur of the protibiae is slender, pointed; the inner is shorter, straight and pointed, not much more than half as long as the outer. The metatibial spurs are moderately broad, dished out, the outer slightly the broader, 0.38 x 0.16 mm.

Holotype: ♂, Saltillo (Coahuila?), E. Palmer, in the M.C.Z.

Epicauta uniforma Werner

Epicauta uniforma Werner, 1944, Psyche 50: 67; 1945, Bull. Mus. Comp. Zool. 95: 452. Dillon, 1952, American Midl. Nat. 48(2): 394.

Epicauta stigmata, Vaurie, 1950, *op. cit.*: 26, fig. 6 (in part).

As here restricted, *uniforma* is a species in which the color of the pubescence on the body varies very little. It is usually brownish-cinereous in color but varies from cinereous to almost luteo-cinereous. The legs are mostly pale pubescent, with a small amount of black at the tips of the femora and tibiae and on most of the tarsi. The antennae are also black-pubescent, with some pale setae on the first two segments. The first segment of the antennae of the male is moderately stout, only slightly excavated. Antennal proportions of a male from Elfrida, Cochise Co., Arizona: 137/49, 63/33, 99/36, 88/36, 88/38, 88/37, 85/36, 82/35, 77/33, 82/31, 110/27. In the female the first segment of the antennae is just perceptibly excavated. A sample of 30 specimens from the Sulphur Spring Valley, Cochise Co., Arizona, ranges from 7.5 to 12.5 mm. in length, with the mean length 10.1 mm.

Ranges from eastern Arizona to eastern Colorado (Lamar), south through West Texas to Durango and Fresnillo, Zacatecas. The Durango and Zacatecas records are listed by Vaurie, *loc. cit.*, as *stigmata*. One sample from 19 mi. S. Sombrerete, Zacatecas, 7000′, Sept. 5, 1952, R. K. Selander, should be added to Vaurie's Mexican records. Champion's record (*op. cit.*: 422) of *stigmata* from Saltillo, Coahuila may refer to this species or to *nigritibialis*. He makes no mention of the characteristics of the specimens on which his record is based. The species is abundant in the Sulphur Spring Valley, Cochise Co., Arizona from July to September, feeding mainly on *Solanum elaeagnifolium*. There are two records from this region of specimens feeding on *Kallstroemia* blossoms and one feeding on *Datura*. Dillon, *loc. cit.*, gives records of capture on string bean and alfalfa. All of the new specimens from Mexico reported by Vaurie were collected in August.

Epicauta alpina Werner

Epicauta alpina Werner, 1944, Psyche 50: 67; 1945, Bull. Mus. Comp. Zool. 95: 453. Dillon, 1952, *op. cit.*: 411.

This is a moderately slender species in which the pubescence is quite dense, almost obscuring the ground color, and usually bright luteo-cinerous to luteous. The elytra are somewhat paler in ground color than the body. The head is narrowly triangular and the mandibles are somewhat longer and more prominent than they are in *uniforma* or *nigritibialis*, the species most likely to be confused with it. The first segment of the antennae of the male is distinctly excavated externally toward the apex and there is a good trace of the excavation in the female. Antennal proportions of a male from McNeal, Cochise Co., Arizona: 168/42, 67/34, 90/39, 84/43, 90/42, 87/39, 84/39, 81/39, 76/39, 73/38, 101/34. The head of this specimen is 2.49 mm. long to tip of mandibles, 1.67 to clypeus, 1.86 mm. wide behind the eyes, 1.80 across the eyes, which are separated by 0.95 mm. across the front. In a male of *uniforma* from Elfrida, Arizona the head is 2.56 mm. long to tip of mandibles, 1.73

to clypeus, 2.02 mm. wide behind eyes, 1.99 across eyes and the eyes are separated by 1.14 mm. The head of *alpina* is narrower and more straight-sided, as is shown by a comparison of the width across the eyes and the separation of the eyes in these two specimens. A sample of 32 specimens from the Sulphur Spring Valley, Cochise Co., Arizona ranges from 10.0 to 13.0 mm. in length, with the mean length 11.5 mm.

Alpina is known only from the United States, from Alpine, Texas; Deming, New Mexico and the Sulphur Spring Valley, Cochise Co., Arizona. In Arizona it has been taken from July to September on *Solanum elaeagnifolium,* along with *uniforma,* and has been recorded once from *Kallstroemia* blossoms and once from ''mallow.'' It is much less abundant than *uniforma* in Arizona and occurs in a more restricted area.

Epicauta bipunctata sp. n.

In what is probably its commonest color form this species looks like *E. punctum* (Dugès) in the Funesta-Group, cinereous with a single small black dot toward the apex of each eyltron. The males are readily distinguishable on group characters. *Bipunctata* has a much greater variability in color pattern than does *punctum,* as detailed below.

9-15 mm. long, ground color black, with decumbent pubescence in one of the following color patterns: ''cinereous,'' moderately densely cinereous-pubescent, the general color influenced by the ground color, with black pubescence on the tarsi, tibiae except for some cinereous pubescence on anterior and posterior sides basally on meso- and metatibiae and anterior side of protibiae, and on extensor edge of apex of femora, extending basally in some specimens. If the cinereous area is extensive on the tibiae, there may be a few pale setae on tarsal segment I. The meso- and metafemora are almost glabrous posteriorly and the metafemora and metatrochanters also on the flexor surfaces. ''Two-spotted,'' same as ''cinereous'' except that there is a black-pubescent spot on each elytron in the middle of the apical third. ''Bicolored,'' like ''cinereous'' except elytra narrowly cinereous across base and narrowly and feebly along the sides to about the middle, black elsewhere. ''Black,'' pubescence entirely black above and below. Metatibial comb of male poorly developed, in a curved series, often reduced and sometimes absent.

Holotype: ♂, length ca. 10 mm. with head deflexed. Color pattern ''two-spotted.'' Head rounded, 1.89 mm. long to clypeus, 2.15 mm. wide behind eyes, 2.28 across eyes, widest just behind eyes and almost evenly rounded behind, with just a trace of tempora. Surface with normal punctures, ca. 0.03 mm. across and ca. 0.02 mm. apart, the intervals smooth and punctulate. Clypeus and labrum microreticulate. Antennal calluses small, glabrous, feebly microreticulate. Median impressed line fine but distinct down to the level of the eyes. Front with a rufous spot. Eyes moderately prominent, 1.12 x 0.73 mm., excavated above base of antennae and separated by 1.23 mm. across the front. Maxillary palpi slightly swollen and elongated, the last segment 0.73 x 0.30 mm. Antennae 5.23 mm. long, reaching to about the basal fourth of the elytra. Segments I-III have pale pubescence, which extends to beyond the middle of III. Segment I reaches ca. ½ across the eye and is almost straight-sided, with only a feeble trace of an outer apical excavation. Segments IV-X almost tubular, bulging very slightly toward the middle. Proportions: 145/72, 66/45, 121/46, 83/46, 88/48, 83/47, 85/46, 69/45, 83/45, 75/42, 100/42.

Pronotum feebly campanulate, 2.27 mm. long, 2.18 wide across base, the sides almost parallel for the basal 4/5. Surface almost as on head but partly feebly microreticulate, with a feeble impressed midline in the middle of the disc, supplemented by a narrow denuded line. Elytra 8.15 mm. long, 3.16 mm. wide across base, straight-sided but slightly broadened behind and separately rounded apically. Suture and four costulae extremely feebly elevated. There are a few black setae at the base, near the scutellum. Underside cinereous-pubescent except for black on the sides of the feebly truncate last abdominal sternite and as noted in the general description of color. Inner protibial spur slightly shorter than outer, not stouter and very feebly curved. First four segments of the protarsi slightly thickened, I 0.57 mm. long, 0.38 mm. thick, including a well-developed pad. Outer metatibial spur slightly broader than inner, pointed, slightly angled. Femora and tibiae not provided with longer setae. Tibiae somewhat flattened and moderately stout. Metatibial comb poorly developed, with several oblique teeth.

Allotype: ♀, differs very little from the male. Antennal segment I is slightly shorter and more slender (0.66 x 0.22 mm.) than in the male (0.76 x 0.28 mm.): maxillary palpi more slender (last segment 0.60 x 0.25 mm.) and the protarsal segments not swollen (segment I 0.55 x 0.30 mm., including a less well developed pad). The protibial spurs are just perceptibly more slender than in the male.

Variation: This species varies both in color and in the development of the male metatibial comb, which varies from a row of about eight short, oblique teeth to apparent absence. The most common condition is the presence merely of a few flattened seta-like structures. Distinguishing the sexes on the secondary sexual characters is not always easy. The males have the inner side of the apex of the metatibiae cut out next to the comb or where the comb should be. In the females the apex slopes evenly to the base of the inner spur. The black elytral spot of ''two-spotted'' individuals varies from a few setae to a spot about 0.90 mm. across in the series from Chilpancingo, to transverse and twice this width in one specimen from Guadalajara. The Chilpancingo series varies from 9 to 12 mm. in length (mean 10.8 mm.), the Mexcala series from 10.5 to 14 (mean 12.3) and the Guadalajara specimens from 12 to 15 (mean 14.1).

Holotype: ♂, Chilpancingo, Guerrero, Mexico, 4900′, August 11, 1952, F. W. & F. G. Werner, in blossoms of a Convolvulaceous vine, in the M.C.Z. Allotype: ♀, eutopotypical, in the M.C.Z. Paratypes: 40 ♂♂, 15 ♀♀ ''two-spotted,'' 2 ♀♀ ''cinereous,'' eutopotypical. 1 ♂ ''two-spotted,'' 2 ♂♂ ''black,'' 10 km. N. Acahuizotla, Guerrero, 3900′, Aug. 12, 1952, F. W. & F. G. Werner, in blossoms of a Convolvulaceous bush. 2 ♂♂, 4 ♀♀ ''two-spotted,'' 1 ♂, 1 ♀ ''bicolored,'' 8 ♂♂, 8 ♀♀ ''black,'' Mexcala, Guerrero, 1600′, Aug. 30, 1952, R. K. Selander. 1 ♂ ''two-spotted,'' Tepoztlan, Morelos, Aug. 20, 1956, R. R. Dreisbach. 1 ♀ ''two-spotted,'' Hujintlan, Morelos, Aug. 22, 1956, R. & K. Dreisbach. 1 ♂ ''two-spotted,'' Zapotlanejo, (Jalisco), 5500′, Aug. 20, 1954, R. R. Dreisbach. 4 ♂♂, 1 ♀ ''two-spotted,'' 1 ♀ ''cinereous,'' Guadalajara, (Jalisco), McConnell, Carn. Mus. Acc. 3913. 1 ♂ ''two-spotted,'' same data but collected by Crawford. Paratypes deposited in the M.C.Z., Carnegie Museum, U. S. N. M., British Museum, Instituto de Biologia in Mexico City and in the collections of R. R. Dreisbach, R. B. Selander and the author.

On the basis of poorly developed metatibial combs in the males a series from Tepic, Nayarit, Oct. 8, 1948, A. C. Smith, in the U. S. N. M. is doubtfully associated with this species. These specimens were collected on beans. There are two black males, a black female, a much abraded but at least partly cinereous male and a female that is cinereous, like "two-spotted" but with the spots transverse, reaching from suture to margin of the elytra, as in *funesta* (Chev.). If this last specimen belongs to this species, the range of variation may be even greater than indicated by the series at hand.

Epicauta stigmata (Dugès)

Cantharis stigmata Dugès, 1870, La Naturaleza 1: 159, pl. 2, fig. 8, a 1-7.
Epicauta stigmata, Dugès, 1889, An. Mus. Michoacano 2: 69 (in part).
Champion, 1892, *op. cit.*: 422 (in part). Vaurie, 1950, *op. cit.*: 26, fig. 6 (in part).

This highly variable species has been much confused in collections. A single species seems to have been included in Dugès' original series but at least one other, *E. tenuemarginata*, was probably included in his redescription in 1889. Champion included a sample from Saltillo, Coahuila in his series and this sample most likely represents *nigritibialis* or, possibly, *uniforma*. Vaurie included some material now referred to as *uniforma*. Dugès' *intermedia* appears, from the description, to belong to the subgenus *Epicauta* in the group of species related to *cinerea* (Forst.), because of the mention that the anterior tarsi have the first segment dilated and that the prothorax has a distinct median impressed line. These characteristics, along with Vera Cruz as the locality of collection, indicate a member of the *cinerea* group of species.

As here redefined *stigmata* has the following variations in color pattern of the pubescence: "cinereous," entirely cinereous to brownish-cinereous above, with some darker markings on the legs, especially on the tarsi and the tips of the femora and tibiae; "salt-and-pepper," like cinereous but with scattered single black setae, from a few to almost half black; "subvittate," head and pronotum largely cinereous, with or without scattered black setae, elytra largely black but with scattered cinereous setae that are more concentrated on the margins and apex and on a median vitta of greater or lesser extent on each elytron; "pepper-and-salt," black with scattered cinereous setae, from a few to almost half; and "black," entirely black pubescent above and below. The ground color of all specimens examined is entirely black or very dark.

"Cinereous" specimens are very similar to paler specimens of *E. uni-*

forma and the "cinereous" form of *E. bipunctata*. "Black" specimens are most likely to be confused with small specimens of *E. melanochroa*. A ♂ specimen from Chavinda, Michoacan has the following measurements: Length ca. 10 mm. with head deflexed. Head 1.58 mm. long to clypeus, 1.96 mm. wide behind eyes and 2.03 across eyes. Eyes 1.01 x 0.63 mm., separated by 1.04 mm. across the front. Last segment of maxillary palpi 0.50 x 0.25 mm. Pronotum 1.78 mm. long, 1.90 wide. Elytra 7.92 mm. long, 2.65 mm. wide at base, 2.84 at widest. Antennae 5.40 mm. long. Proportions: 158/53, 70/41, 105/41, 88/42, 85/41, 83/41, 85/40, 77/36, 75/35, 73/35, 101/34. The first segment is rather stout, with a well indicated excavation externally near the apex.

In the available series of five or more specimens the following numbers of the different pubescence patterns occur: 9 mi. N. of Mazamitla, Jalisco (1 cin., 1 s.&p., 4 p.&s., 1 blk.); 10 km. E. Quiroga, Michoacan (2 cin., 1 s.&p., 2 subvit., 2 p.&s.); Chavinda, Michoacan (14 p.&s., 7 blk.); Patzcuaro, Michoacan (6 subvit., 11 p.&s.); Atlacomulco, Mexico (6 cin., 1 p.&s.); Toluca, Mexico (5 cin., 19 p.&s., 3 blk.); 10 km. W. Queretaro, Queretaro (35 cin., 1 subvit., 1 p.&s.); Puebla, Puebla (7 cin., 1 s.&p., 1 p.&s., 1 blk.). Pairs pinned in cop. were cin. ♂ & blk. ♀ from Toluca, p.&s. ♂ & cin. ♀; cin. ♂ & cin. ♀, Atlacomulco.

In the sample of 38 specimens from 10 km. W. of Queretaro the length varies from 7.0 to 10.5 mm., with head deflexed (mean 8.9); in 27 specimens from Toluca 10.0 to 13.0 (mean 11.0); in 21 from Chavinda, Michoacan 9.0 to 11.5 (mean 10.1) and in 17 from Patzcuaro, Michoacan 9.0 to 11.5 (mean 10.5). Two very large specimens from Zamora, Michoacan are 15 mm. long.

Specimens have been examined from the following localities: *Jalisco*: 9 mi. N. Mazamitla, 6300′, July 31, 1952, F. W. & F. G. Werner. 10 km. N. Tepatitlan, 6250′, July 17, 1952, F. W. & F. G. Werner. El Molino, July 10, 1956, R. & K. Dreisbach. Lagos de Moreno, 6300′, Aug 12, 1954, R. R. Dreisbach. Km. 538 betw. Jiquilpan & Chapala, 1260 m., Sept. 13, 1950, Ana Maria de Buen. *Guanajuato*: Leon, 5800′, Aug. 19, 1954, R. R. Dreisbach. 5 mi. N. Salamanca, 6000′, Aug. 19, 1954, R. R. Dreisbach. *Michoacan*: Jacona, July 15, 1956, R. & K. Dreisbach. Zamora, Aug 30, 1950, D. Enderlin. 10 km. E. (7600′) and 17 km. E. (6800′) of Quiroga, Aug. 3, 1952, F. W. & F. G. Werner. Patzcuaro, 6500′, Aug. 3, 1952, F. W. & F. G. Werner. Chavinda, 5600′, July 31, 1952, F. W. & F. G. Werner. *Mexico*: Toluca, Aug., 1951, H. Canales and July 12, 1955, R. B. & J. M. Selander. 20 mi. N. Toluca, 8500′, Aug. 17, 1954, R. R. Dreisbach. Atlacomulco, 8100′, Aug. 10, 1954 and 8500′, Aug. 18, 1954, R. R. Dreisbach. *D. F.*: Tlalpam, Sept. 3, 1903, W. L. Tower. *Queretaro*:

nr. Hac. Balvanera (10 km. W. Queretaro), July 13, 1955, R. B. & J. M. Selander. *Tlaxcala*: 4 mi. N. W. Huamantla, June 29, 1955, R. B. & J. M. Selander. *Puebla: Puebla,* Aug., 1903, W. L. Tower. *Morelos:* 8 km. E. Cuernavaca, 5500′, Aug. 11, 1952, F. W. & F. G. Werner. Tepoztlan, Aug. 20, 1956, R. & K. Dreisbach and Oct. 5, 1947, J. Alvarez.

Dugès, 1870, states that these beetles eat the blossoms of *Convolvulus variabilis* and occur in large numbers in Guanajuato in July. Samples from 9 mi. N. Mazamitla, Jalisco; Chavinda, Patzcuaro and 17 km. E. of Quiroga, Michoacan all were taken feeding on blossoms of a bushy Convolvulaceous plant. The sample from 10 km. W. of Queretaro was taken on *Ipomoea longifolia* and the one from 4 mi. N. W. of Huamantla, Tlaxcala on *Ipomoea stans.* Feeding records on non-Convolvulaceous plants are: on blossoms of *Solanum* at 10 km. E. of Quiroga and Patzcuaro, Michoacan; on *Argemone* at Toluca, Mexico and on blossoms of a Composite 8 km. W. of Cuernavaca, Morelos. No long series were taken except on Convolvulaceae.

Epicauta melanochroa Wellm.

Cantharis nigra Dugès, 1870, La Naturaleza 1: 161, pl. 2 fig. 7, b. 1-7.
Epicauta nigra, Dugès, 1889, An. Mus. Michoacano 2: 76 (not *Epicauta nigra* (Woodhouse), 1800, a synonym of *E. pensylvanica* (DeGeer).) Champion, 1892, *op. cit.*: 418.
Epicauta melanochroa Wellman, 1910, Deutsche Ent. Zeitschr., 1910: 24. (Substitute name for *nigra* Dugès nec Woodhouse).

This slender black species is one of the most abundant in the Uniforma-Group in the region from Jalisco through Michoacan. Once it is recognized it is quite distinctive and can be confused only with the black form of *E. croceicincta* (Dugès) in the Funesta-Group. The males are readily distinguishable on group characters but the females are very similar. The punctures on the head and pronotum are slightly different and can be used when known males are available for comparison.

The measurements of a ♂ from Chavinda, Michoacan are as follows: Length ca. 15 mm. with head deflexed. Head 2.24 mm. long to clypeus, 2.62 mm. wide behind eyes, 2.72 across eyes. Eyes 1.43 x 0.79 mm., separated by 1.42 mm. across the front. Last segment of maxillary palpi 0.73 x 0.38 mm. Pronotum 2.72 mm. long, 2.40 wide. Elytra 11.74 mm. long, 3.68 mm. wide across base, 3.82 at widest. Antennae 7.72 mm. long; proportions: 184/53, 57/37, 115/41, 84/41, 80/41, 82/38, 82/37, 80/33, 76/31, 74/29, 88/29. The first segment is moderately slender and somewhat flattened, distinctly excavated externally toward the apex but with the excavation shallow. The female has the antennae somewhat shorter.

Those of a ♀ ca. 15 mm. long with the head deflexed are 6.61 mm. long and have the first segment proportionately shorter and the last segment proportionately longer than in the male.

The general aspect of this species is that it is feebly shiny. The pubescence is moderately short and fine, appressed and barely affecting the appearance of the insect. The surface of the body is a little smoother than it is in *stigmata* and therefore *melanochroa* appears a bit shinier than that species. It is also more slender and almost always longer. A series of 46 specimens from Chavinda, Michoacan varies from 12.0 to 15.0 mm. long (mean 13.5). Most specimens examined are in this size range. However a sample of 6 specimens from Tepoztlan, Morelos varies from 11.0 to 12.0 mm. (mean 11.6).

The pubescence of the male metafemora varies in a series. When the long setae along the flexor surface are well developed, they form a fringe above and below a partially glabrous surface and may extend onto the flexor surface of the metatibiae. From this extreme they vary to being essentially normal, as in the female. In the available series with six or more males the variation of the metafemoral pubescence is as follows: Guadalajara, Jalisco (2 long, 1 intermediate, 6 short); 10 km. N. Tepatitlan, Jalisco (13 long, 2 interm., 2 short); 9 mi. N. Mazamitla, Jalisco (12 long, 4 interm., 3 short); 40 mi. N. E. Tamazula, Jalisco (15 long, 1 interm., 6 short); Chavinda, Michoacan (6 long, 7 interm., 7 short); 10 km. W. Queretaro, Queretaro (1 long, 5 interm., 5 short) and Tepoztlan, Morelos (2 interm., 4 short).

The specimens examined came from the following localities: *Nayarit*: Tepic, July 20-24, 1952, F. W. & F. G. Werner. *Jalisco*: El Molino, July 10, 1956, R. & K. Dreisbach. El Molinos, Aug. 11, 1951, C. H. Seevers. 10 km. N. Tepatitlan, 6250′, July 17, 1952, F. W. & F. G. Werner. Tepatitlan, 6200′, Aug. 20, 1954, R. R. Dreisbach. 9 mi. N. Mazamitla, 6300′, July 31, 1952, F. W. & F. G. Werner. 40 mi. N. E. Tamazula, 6000′, July 27, 1952, F. W. & F. G. Werner. Guadalajara, McConnell & Crawford, Carnegie Museum. Zapopam, Sept. 11, 1903, W. L. Tower. 11 m. N. Chapala, 1530 m., July 15, 1947, T. H. Hubbell. Lagos de Moreno, 6300′, Aug. 12, 1954, R. R. Dreisbach. *Michoacan*: 17 km. E. Quiroga, 6800′, Aug. 3, 1952, F. W. & F. G. Werner. Jacona, July 15, 1956, R. & K. Dreisbach. Chavinda, 5600′, July 31, 1952, F. W. & F. G. Werner. 11 km. W. Chupicuaro, 6700′, Aug. 2, 1952, F. W. & F. G. Werner. *Mexico*: Atlacomulco, 8500′, Aug. 18, 1954, R. R. Dreisbach. Teotihuacan, July 21, 1956, R. & K. Dreisbach. *D. F.*: Guadalupe, Aug. 31, 1906, W. L. Tower. Tlalpam, Sept. 3, 1903, W. L. Tower. *Queretaro*: nr. Hac. Balvanera, July 13, 1955, R. B. & B. K. Selander. *Morelos*: Tepoztlan, Aug. 20, 1956, R. & K. Dreisbach.

Dugès, 1870, mentions the occurrence of this species on “*Convolvulus*” in Michoacan from June to August. Specimens from 40 mi. N. E. of Tamazula, Jalisco and from 9 mi. N. Mazamitla, 17 km. E. Quiroga, 11 km. W. Chupicuaro and Chavinda, Michoacan were taken feeding on blossoms of a Convolvulaceous bush. The series from Hac. Balvanera, Queretaro was taken on *Ipomoea longifolia.* The only record from other than Convolvulaceae is a long series from 10 km. N. of Tepatitlan, Jalisco taken feeding in squash blossoms.

Epicauta tenuemarginata sp. n.

Epicauta stigmata, Dugès, 1889, An. Mus. Michoacano 2: 69, not 1870, La Naturaleza 1: 159 (in part).

This species occurs in the same blossoms with *E. stigmata,* at least in Michoacan, and Dugès appears to have confused it with that species in his 1889 summary. It is amply distinct in many ways. The antennae, especially in the male, are much different and the presence of long setae on the metafemora of the males is an additional difference. The variation in this species is fairly great as regards the color pattern of the pubescence, though with a different pattern of variation than in *stigmata.* The ground color is black, the pubescence moderately sparse, in the following color patterns: “Margined,” black dorsally, cinereous on margins of head, margins and midline of pronotum, scutellum and margins of the elytra, the suture very narrowly. (There is a trace of a cinereous line on the elytra just median to the humeri and extending back to about the midle of the elytra, and varying from single pale setae to a feebly marked stripe, in 13 of 28 margined specimens.) Ventrally this color form is cinereous except black medially on several abdominal sternites, on tips of femora, outer edges of tibiae and part of tarsi. “Cinereous,” cinereous dorsally, with a feeble black marking on the humeri, from a small spot to a short, narrow stripe, in 8 out of 9 specimens. (Also with a black spot near the scutellum in one well-marked specimen.) Underside cinereous except for the black leg markings noted above, the black on the metatibiae tending to be reduced to a small apical zone. “Black,” entirely black-pubescent.

Holotype: ♂, “margined.” Length ca. 10 mm. with head deflexed. Head 1.61 mm. long to clypeus, 1.96 mm. wide behind eyes, 2.12 across eyes, subquadrate, with the tempora well marked. The disc is somewhat flattened, with shallow but well marked crateriform punctures, ca. 0.04 mm. across and separated by 0.02 mm., the surface between them microreticulate and finely punctulate. Median impressed line feeble, down to the level of the middle of the eyes, augmented by a narrow smooth zone behind the eyes. Antennal calluses small, puncture-less but microreticulate. Front with a small rufous spot. Pubescence subdecumbent, not conspicuous where black. Eyes prominent, transverse, 0.98 x 0.73 mm., excavated above base of antennae, separated by 1.14 mm. across the front. Maxillary palpi moderate in size, the last segment 0.51 x 0.24 mm. Antennae 5.07 mm. long, reaching about basal 2/5 of the elytra, moderately slender. Segments I and II have suberect pubescence. Segment I reaches 4/5 across the eye and is slightly angled on the outer surface at about the apical 2/5, the surface beyond the angulation slightly less densely punctured and pubescent than the rest of the surface. Segment II is straight along the opposing surface but is barely discernibly flattened. Segments IV-X bulge slightly on the outer face. Proportions: 163/56, 69/41, 113/44, 82/44, 78/42, 82/41, 82/40, 78/40, 78/38, 75/38, 100/38.

Pronotum quadrate, the sides almost straight to 1/5 from apex, then converging abruptly; disc somewhat flattened. Length 1.64, width 1.77 mm. Surface almost as on head but the punctures slightly larger and the intervals more strongly microreticulate. Median impressed line fine but distinct on the disc before the middle, extended as a median impression behind. The pubescence along the midline is partly directed backward. Elytra densely and deeply microreticulate, moderately densely punctured but the punctures not crateriform. Length 7.33 mm., width across base 2.87 mm., the sides straight but gradually wider behind; apices individually rounded. The suture is strongly elevated and there are three feeble costulae, one from near the scutellum, one from the dorsal side and one from the ventral side of the humeri. Pubescence of underside mostly longer than above. Last abdominal sternite truncate, feebly excavated apically. Inner spur of protibiae noticeably shorter than outer, tapered to a point and very slightly curved. Flexor surfaces of meso- and metafemora and trochanters, metatibiae and base of mesotibiae with some long pubescence. The metafemora have the long setae margining a semi-glabrous, slightly flattened flexor surface that bears some short setae. The metatibial spurs are subequal, moderately slender, the outer slightly angled at about the middle. Comb of metatibiae strong, of about 10 perpendicular teeth, which become gradually longer apically.

Allotype: ♀, ''margined.'' Differs from the ♂ in having a shorter and unmodified first antennal segment, with just a suggestion of the subapical excavation, normal pubescence on the legs and the inner protibial spur almost as long as the outer and equally slender. The last segment of the maxillary palpi is slightly shorter and broader, 0.47 x 0.28 mm. The last abdominal sternite is subtruncate apically but the margin is not excavated. Antennal proportions: 146/63, 63/42, 111/49, 83/49, 83/49, 83/46, 83/45, 76/44, 83/42, 76/42, 111/42.

Variation: The principal variation in the series at hand is in the color pattern of the pubescence as listed above. The size varies only slightly in the available specimens, from 9.0 to 11.0 mm. (mean 10.0).

Holotype: ♂, Patzcuaro, Michoacan, Mexico, 6500′, Aug. 3, 1952, F. W. & F. G. Werner, in the M. C. Z. Allotype: ♀ eutopotypical, in the M. C. Z. Paratypes: 11 ♂♂, 3 ♀♀, ''margined,'' eutopotypical. 7 ♂♂, 4 ♀♀, ''margined,'' 3 ♂♂, 4 ♀♀, ''cinereous,'' 17 km. E. Quiroga, Michoacan, 6800′, Aug. 3, 1952, F. W. & F. G. Werner. 1 ♂, ''margined,'' 96 km. S. W. Guadalajara, Jalisco, 5500′, July 25, 1952, F. W. & F. G. Werner. 1♂, ''cinereous,'' 9 mi. N. Mazamitla, Jalisco, 6300′, July 31, 1952, F. W. & F. G. Werner. 1 ♂, ''margined,'' Guadalajara, Jalisco, McConnell, Carnegie Mus. Acc. 3913. 1 ♂, ''black,'' El Molino, Jalisco, July 10, 1956, R. & K. Dreisbach. Deposited in the M. C. Z., Carnegie Museum, U. S. N. M., British Museum, Instituto de Biologia and the collections of R. R. Dreisbach, R. B. Selander and the author.

The specimens from Patzcuaro and 17 km. E. Quiroga, Michoacan and from 9 mi. N. Mazamitla and 96 km. S. W. Guadalajara, Jalisco were all taken eating blossoms of a Convolvulaceous bush. A "margined" male and "cinereous" female were taken in cop. 17 km. E. of Quiroga.

Epicauta leoni Dugès

Epicauta Leoni Dugès, 1889, An. Mus. Michoacano 2: 74. Champion, 1892, *op. cit.*: 420.

This is a very distinctive little species and one that is apparently quite rare. Two specimens in the Instituto de Biologia in Mexico City are probably from Dugès' series. When these were examined in 1948 the first specimen bore pin labels "Morelia," "761 D-2006" and "♀." This specimen was in poor condition. The second specimen was a male which was labelled "3006" and was entirely black-pubescent. In 1952 both these specimens were labelled "Morelia." The male was compared in 1952 with the specimen used as the basis for the description below.

♂, Chapingo, Mexico, Mexico, Aug. 3, 1950, C. F. Dowling. Length ca. 9.5 mm. with head deflexed. Head and pronotum with large, crateriform punctures. Length of head 1.55 mm. to clypeus, 1.86 mm. wide behind eyes, 1.89 mm. across eyes. Tempora prominent and disc somewhat flattened. Eyes 0.95 x 0.63 mm., separated by 1.07 mm. across the front. Last segment of maxillary palpi 0.51 x 0.27 mm. Pronotum 1.61 mm. long, 1.77 mm. wide. Elytra 7.78 mm. long, 2.81 mm. wide across base and almost parallel. Antennae 5.53 mm. long; proportions: 180/57, 69/39, 91/45, 74/43, 80/41, 80/40, 80/40, 80/37, 77/35, 74/34, 114/34. The characteristics of the first two segments are given in the key to species. They are more extreme than they are in *tenuemarginata,* the species mos like *leoni.* All known specimens of *leoni* are entirely black but only four specimens can now be accounted for. Dugès does not mention how many specimens he had in his original series.

Epicauta triquetra sp. n.

This is a very distinctive species and comes from an area in Mexico quite different from that in which most of the species in this group are found. The single known specimen is entirely black.

Holotype: ♂. Moderately stout, entirely black and black-pubescent. Head broad, triangular; mouth parts normal; first antennal segment elongate, deeply excavated and the second segment flattened on the opposing surface. Length ca. 17 mm. with the head deflexed. Pubescence fine, short, subdecumbent, inconspicuous. Head triangular, 2.72 mm. long to clypeus, 3.63 mm. wide at the tempora, 3.32 mm. across eyes. Base truncate, feebly notched at the middle; tempora fairly abruptly rounded.

Surface densely punctured, the punctures ca. 0.05 mm. across, distinct, the bottoms somewhat flattened; intervals narrow, ca. 0.01 mm., punctulate and feebly microreticulate. Midline impressed and smooth down to the level of the eyes. Front with an elongate rufous spot that is puncture-free but microreticulate. Antennal calluses almost puncture-free, microreticulate, fairly large and only feebly elevated. Eyes not very prominent, fairly narrow, oblique, 1.58 x 0.98 mm., separated by 1.67 mm. across the front. Fronto-clypeal suture deep; clypeus bulging transversely along the middle. Labrum broadly but shallowly excavated apically. Mouth parts apparently normal; last segment of maxillary palpi 0.66 x 0.33 mm. Antennae 6.9 mm. long, the first segment moderately stout, reaching well beyond the eye and deeply excavated from the middle to the apex, appearing angulate at the middle of the outer margin. The excavation is deep and flat-bottomed, microreticulate and with a few scattered punctures bearing setae. Segment II flattened and slightly excavated on the opposing surface, with flattened surface similar to that on segment I but with a patch of suberect setae near the hind margin of the flattening. Segments IV-VI are somewhat swollen, the following segments gradually less so. Proportions: 228/64, 78/41, 96/47, 69/50, 69/50, 73/50, 78/43, 78/43, 73/40, 69/38, 89/37. Segment I is 73 thick on the same scale and segment II 57, thickness being calculated anteroposteriorly with the antennae straight out to the side.

Pronotum broad, 2.33 mm. long, 3.18 mm. wide, the base shallow and evenly excavated, the sides roughly parallel on the basal 2/3, then converging at a 30° angle. Surface much like that of head. Basal impressed line fine; median impressed line fine and marked only on the middle of the disc, where it is in a puncture-free area about 0.14 mm. wide and 0.32 mm. long. The disc has a bump on each side just above the lateral angulations, with a distinct depression behind each bump. Elytra subparallel, 12.32 mm. long, 4.48 mm. wide across base, ca. 4.95 at the widest. Suture slightly elevated and traces of costulae present. Anterior legs not modified. Both protibial spurs spiniform, the inner short, the apex reaching to about the basal third of the outer. Metafemora with a sparse fringe of long setae along their flexor margins. Metatibial spurs moderately slender, the outer slightly the wider, 0.22 x 0.06 mm., both angled and dished out.

Holotype: ♂, 5 mi. E. C(iudad) del Maiz, (San Luis Potosi), Mex(ico), 4700', 8-25-54, R. R. Dreisbach, in the M. C. Z.

Epicauta selanderorum sp. n.

This species might at first impression appear to be the same as *E. labialis* (Dugès). No specimens of the latter are on hand for study but Dugès mentions (An. Mus. Michoacano 2: 52) that segments 6 to 10 of the antennae of the male are "en triangulo alargado", a condition that could not fit the present species. He also mentions that part of his specimens had a trace of gray pubescence, even though they were greatly abraded.

Entirely black except for a small rufous spot on the front of the head; pubescence black, decumbent, fine, moderately sparse. Labrum deeply excised; mandibles angled backward and inward near the middle; first antennal segment of male deeply excavated: Holotype: ♂. Length, with head deflexed, ca. 13 mm. Head, including mandibles, forming a triangle, with the tempora rounded, 1.93 mm. long to clypeus, 2.62

mm. wide behind eyes and 2.54 mm. across eyes. Eyes narrow, 0.53 x 0.25 mm., separated by 0.55 mm. across the front, excavated opposite the base of the antennae. Surface of head moderately punctured, the punctures small but distinct, ca. 0.02 mm. apart, the intervals finely but distinctly microreticulate. Median impressed line fine but distinct down to the level of the eyes; rufous spot mostly puncture-free. Antennal calluses with a few punctures, microreticulate. Fronto-clypeal suture well-marked, semicircular, the front well elevated above the base of the clypeus. Clypeus truncate, more deeply punctured and microreticulate than the head. Labrum deeply excised, about 0.35 mm. long at the middle, 0.73 at the longest, the sides bulging and the excision U-shaped. Width 0.95 mm., of the excision ca. 0.35 mm. The middle, at the base of the excision, is densely punctured, with dense, thickened, golden setae ca. 0.16 mm. long. Underside of lobes provided with similar setae, projecting beyond the tips of the lobes and with shorter setae projecting into the excision. Mandibles ca. 1.61 mm. long, angled inward and backward at about the middle. The apices are blunt and meet rather than overlap. A lamella, feebly divided into denticles, is visible on each beyond the labrum. The segments of the labial palpi appear to be longer than normal; segment I is 0.41 mm. long and slender, II 0.41 mm. and angled on the inner margin. The tip of the mentum and the galeae have brushes of short, golden pubescence. Maxillary palpi apparently normal, the last segment 0.54 x 0.30 mm. Antennae 7.86 mm. long, slender and tapering. Segment I is deeply emarginate, the juncture of the emargination with the side forming an angle. Segment II is flattened and slightly concave on the opposing surface, with a patch of short, fine, erect pubescence near the hind margin of the flattened surface. Segments III-V are slightly thickened medially and VI-XI are almost parallel-sided. Proportions: 151/58, 67/32, 99/38, 75/38, 83/34, 83/33, 83/29, 83/28, 83/28, 83/25, 107/24. Segment II is thicker than wide, 36 on the same scale.

Pronotum subquadrate, the sides roughly parallel for the basal ⅔, then converging. Length 2.02 mm., width 2.15 mm.; surface similar to head; median impressed line distinct on the middle of the disc; there is a pair of elongate glabrous areas at about the middle, near the sides. Elytra subparallel, 9.33 mm. long, 3.16 mm. wide across base. Protibiae somewhat broadened and flattened, slightly bowed, 1.67 x 0.47 mm. at the broadest. Outer spur sticklike, slightly curved, 0.44 mm. long; inner shorter, 0.32 mm., pointed and slightly curved, set well back from the base of the outer. First segment of protarsi normal. Metatibial spurs subequal, pointed, the outer just perceptibly broader. Metatibial comb well developed, of ca. 12 long, transverse teeth, in a series that arches toward the base.

Holotype: ♂, 16 mi. S.E. of Lagos de Moreno, Jalisco, Mexico, 6700′, Sept. 4, 1952, R. K. Selander. Made available for study by R. B. Selander and deposited in the M.C.Z.

Epicauta mimetica (Horn)

Gnathospasta mimetica Horn, 1875, Trans. American Ent. Soc. 5: 154. Champion, 1892, *loc. cit.*: 403. Wellman, 1910, Canadian Ent. 42: 393.
Epicauta mimetica, Werner, 1945, Bull. Mus. Comp. Zool. 95: 453. Dillon, 1952, American Midl. Nat. 48(2): 416.

This species has apparently been collected only in Texas. The reference to Arizona as the type locality and as additional reference from the Riley collection, in Werner, *op. cit.*: 454, is in error. Horn states the type locality to be "Texas, Belfrage No. 609." Five specimens are in the U.S.N.M. Four of these are labelled "Tex." and "Collection C. V. Riley." One of these bears in addition a buff label, "Gnathospasta mimetica Horn." Another bears a small yellow label, "8692." The fifth specimen appears to be from the same series, with the same kind of printed "Tex." label but is labelled "Coll. Hubbard & Schwarz." The exact locality of the original collection is not known. Geiser,[5] p. 235, mentions that Belfrage made one trip to West Texas and it seems most likely that the specimens were collected on this trip, since the only subsequent collection appears to have been made by D. J. & J. N. Knull in the Davis Mts., Texas, Sept. 20, 1938. Some of the Riley specimens have a purple encrustation on the head, strongly reminiscent of that found on specimens that have fed on the blossoms of Convolvulaceae.

Redescribed from specimens in the collection of C. V. Riley, in the U.S.N.M. ♂: Length ca. 12 mm. with head deflexed. Head subquadrate, broad, 1.89 mm. long to clypeus, 2.43 mm. wide behind eyes, 2.40 across eyes. Surface moderately densely punctured, the intervals feebly microreticulate. Median impressed line distinct to level of eyes, ending in a rufous spot. Pubescence moderately dense but only partly obscuring the ground color, decumbent. Antennal calluses shiny, feebly microreticulate, barely raised, fairly large. Fronto-clypeal suture deep, arched. Labrum 0.76 mm. long, 1.07 mm. wide, with a broad, U-shaped excision to within 0.32 mm. of the base. Margins of excision with stiff pubescence. Mandibles large, 1.42 mm. long, meeting before the labrum in a straight line for about 0.38 mm. The figure of the head given by Horn is out of proportion, particularly behind the eyes. When the mandibles are included, the head is subtriangular. Eyes narrow, 1.26 x 0.51 mm., oblique, excavated and separated by 1.23 mm. across the front. Both the maxillary and the labial palpi are fairly large and slender. The last segment of the maxillary palpi is 0.57 x 0.25 mm. and of the labial palpi 0.47 x 0.18 mm. What appears to be the galeae forms a pair of bluntly pointed structures behind the mandibles, these filling the gap left by the gap behind the apex of the mandibles and the labral excision. Antennae 7.20 mm. long, moderately slender. Segment I moderately slender, with a flattened subapical emargination on the outer edge and bearing a few pale setae; pubescence barely sparser in the emargination than elsewhere. Segment II slightly flattened on the opposing surface and with a feeble patch of short, suberect setae near the posterior margin of the flattening. Segments IV-VI are slightly obliquely truncate apically and segments III-XI are just barely flattened. Proportions: 136/48, 61/39, 105/35, 83/39, 83/37, 83/35, 83/35, 83/31, 83/27, 79/26, 118/26. Pronotum broader than long, 1.71 mm. long, 2.05 mm. wide, widest at 2/5 from the apex, where the sides are subangulate, the sides straight and converging slightly from there to the base. Median impressed line distinct only on the middle of the disc. Basal impressed line distinct. Surface and pubescence similar to that on head but the microreticulation more distinct. Elytra subparallel, 9.84 mm. long, 2.78 mm. wide across base, ca. 3.16 mm. at widest.

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[5] Geiser, S. W., 1948, Naturalists of the Frontier. 2nd ed., 296 pp. University Press in Dallas.

Outer protibial spur thick, blunt at tip, ca. 0.32 x 0.07 mm.; inner shorter, more slender and more curved. Metatibial spurs fairly broad, the outer the broader. Metatibial comb well developed, of about 12 transverse teeth in a straight line. Tips of meso- and metafemora dark pubescent, as well as the very tip of the meso- and metatibiae and the apical tarsal segments. Metacoxae and femora flattened behind, with sparse, short pubescence on the flattening. Metasternum with a large, shallow excavation, this and the middle of the abdominal sternites bearing darker, sparser pubescence, permitting the ground color to show through. Last abdominal sternite black, truncate, very feebly excavated apically.

♀: Inner protibial spur slender, almost as long as the outer. Metasternum not excavated and it and the abdomen uniformly pale pubescent. Last abdominal sternite black, rounded apically. Antennae shorter, more slender than in the male, with segment I proportionately shorter and with just an indication of an excavation; II slender and not modified. The mouth parts appear to be close to identical with those of the male. Legs not modified.

One male in the U.S.N.M. series has the metasternal excavation more feeble, with sparse pale pubescence, and the abdominal sternites with slightly thinned pale pubescence so that the ground color barely shows through.

Epicauta labialis (Dugès)

Cantharis labialis Dugès, 1881, La Naturaleza 5: 145, fig. 9, 9 a-d.
Macrobasis labialis, Dugès, 1889, An. Mus. Michoacano 2: 51.
Epicauta labialis, Champion, 1892, *op. cit.*: 395.
Gnathospasta labialis, Champion, 1892, *op. cit.*: 403.

Dugès described this species from Penjamo, Guanajuato, from specimens that had been collected for medicinal purposes. The species most certainly resembles *E. mimetica* but Dugès' mention of antennal segments 6 to 10 being "en triangulo alargado" makes it difficult to compare his species with *mimetica,* as it does also with *selanderorum.* Because of the very similar modification of the mouth parts, it seems most likely that *labialis* belongs in this group. It has apparently not been collected since its original discovery. There are no specimens of it in the collection of the Instituto de Biología or in the Museo de Historia Natural of the Universidad de Michoacan, which preserves a few specimens of Meloidae that may have been derived from the Dugès collection. Champion mentions two males and one female, which must now be in the British Museum.